DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/10/2011 has been entered.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. An interview was held on May 31, 2011 with Tayan Patel, during which it was discussed how formulas I, Ia, II, IIa of Rheinberger apply to claim 1.

Allowable Subject Matter

4. Claims 6-10, 32-33 are allowed.

5. The claims are allowable because Damman (US 6,706,414) does not teach the claimed Michael addition acceptor compound having only one vinyl group. Rather, Damman teaches glycidyl methacrylate, which is not a Michael addition acceptor compound because glycidyl methacrylate is not capable of acting as a Michael addition acceptor because of the methyl group adjacent to the carbon carbon double bond inhibits the Michael addition reaction and Damman teaches the glycidyl methacrylate functions as a co-catalyst. The glycidyl methacrylate of Damman fall outside the scope of claim claims 6-7. Furthermore, Damman does not provide any motivation to add a Michael addition acceptor compound.

6. The claims are allowable because Rheinberger does not teach process of reacting three components together. Rather, Rheinberger teaches a process of reacting only two components together. The process of Rheinberger fall outside the scope of claims 6-7. Furthermore, Rheinberger does not provide any motivation to use a third component.

7. Claims 2, 5, 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

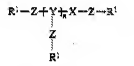
8. Claims 2 and 5 are allowable over the closest prior art, Rheinberger, does not teach a a β-dicarbonyl Michael donor containing functional groups that would result from the reaction of the species described in claims 2 and 5. Rather, Rheinberger teaches alkyl groups on the carbon between the two carbonyl groups, and none of the species of claims 2 and 5 fall within the scope of an alkyl group. The products of Rheinberger fall outside the scope of claims 2 and 5. Furthermore, Rheinberger does not provide any motivation for using any of the species present in claims 2 and 5.

9. Claim 31 depends from claim 2 and therefore contain all the same limitations.

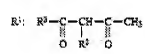
Claim Rejections - 35 USC § 103

10. Claims 1, 3-4, 11-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rheinberger (US 5,539,017).

11. As to claims 1, 3-4, Rheinberger teaches a curable composition (abstract) where a β-dicarbonyl Michael donor of formulas I and Ia,

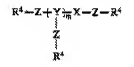


(I)

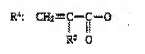


(Ia)

12. are reacted with α,β-unsaturated carboxylic acid esters Michael acceptors of formula II,



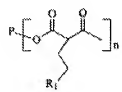
(II)



(IIa)

(col. 2, ln. 18-54).

13. It is noted that in Formula Ia, R^2 means hydrogen, alkyl, or aryl (col. 2, ln. 34). When R^2 is an alkyl group, the Michael donor is seen to be no different than the intermediate



14. on page 8 of the instant specification, where R1 denotes an organic group such as an alkyl group and where the intermediate is the reaction product of the claimed (a) Michael addition acceptor compound having one vinyl group and (c) a β-carbonyl Michael donor (as discussed on pg. 8 of the specification). Therefore, formula I/Ia of Rheinberger corresponds to the reaction product of claimed (a) and (c). Rheinberger teaches the Michael reaction results in a material that is a "more or less solid gel" (col. 4, ln. 25-30). It is the examiner's position that a less solid gel encompasses embodiments that fall within the scope of "liquid".

15. The ratio of vinyl group of vinyl compound (a) to activated hydrogen atom of (c) would have been 1:2, as there is one hydrogen on the β-dicarbonyl Michael donor left to react. The claimed ratio of >1.05:1 of all unsaturated groups of (a) and (b) to the activated hydrogen atoms of (c) indicates an excess of unsaturated groups. Such an excess is taught by Rheinberger, where the mixture is selected so that the molar ratio of β-dicarbonyl compound to acrylic compounds is 0.01 to 20 (col. 4, ln. 4-10). Rheinberger teaches that a stoichiometric excess of the Michael acceptor is used (col. 4, ln. 11-19). This range overlaps the claimed range. It is well settled that where prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See MPEP 2144.05; *In re Harris*, 409, F3.d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 3d 1379, 1382 (Fed. Cir 1997); *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). In light of the cited patent case law, it would therefore have been obvious that in this particular instance to use an amount claimed.

16. It is noted that claim 1 is recited in the product-by-process format by use of the language, "reaction product of..." Case law holds that:

> Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

17. To the extent that the process limitations in a product-by-process claim do not carry weight absent a showing of criticality, the reference discloses the claimed product in the sense that the prior art product structure is seen to be no different from that indicated by the claims.

18. As to claims 13-14, 17-18, 21-22, 25-26, 29-30, Rheinberger teaches a cured product (col. 30-32).

19. It is noted that claims 13-14, 17-18, 21-22, 25-26, 29-30 are recited in the product-by-process format by use of the language, "A cured product obtained by the curing method..." Case law holds that:

> Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

20. To the extent that the process limitations in a product-by-process claim do not carry weight absent a showing of criticality, the reference discloses the claimed product in the sense that the prior art product structure is seen to be no different from that indicated by the claims.

21. As to claims 11, 15, 19, 23, 27, Rheinberger teaches further curing by radical polymerization (col. 4, ln. 30-32) with light (col. 7, ln. 67-col. 8, ln. 2) or heat (col. 3, ln, 66-67).

22. As to claims 12, 16, 20, 24, 28, Rheinberger does not teach the addition of a photoinitiator in the polymerization (col. 7, ln. 67-col. 8, ln. 2). As Rheinberger does not teach the presence of a photoinitiator, it would have been obvious that a photoinitiator was not added. Additionally, in view of Rheinberger's recognition that redox initiator systems and photoinitiated systems are equivalent and interchangeable (col. 1, ln. 24-36), it would have been obvious to one of ordinary skill in the art to substitute photoinitiators with redox initiators and thereby arrive at

the present invention. Case law holds that the mere substitution of an equivalent is not an act of invention, where equivalency is known in the prior art, the substitution of one equivalent for another is not patentable. See *In re Ruff* 118 USPQ 343 (CCPA 1958).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT C. BOYLE whose telephone number is (571)270-7347. The examiner can normally be reached on Monday-Thursday, 9:00AM-5:00PM Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT C BOYLE/
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